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PATENT APPLN. NO. 10/633,418  
SUBMISSION UNDER 37 C.F.R. §1.114

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REMARKS

Claims 1 and 4 are rejected in the Final Action dated April 18, 2006, as being anticipated under 35 U.S.C. 102(b) by the disclosure of WO00/62356 (hereinafter: "Ura"). Claims 2 and 3 are rejected in the Final Action as being obvious under 35 U.S.C. 103(a) over Ura in view of Coetzer (U.S. Patent No. 6,007,943) (hereinafter: "Coetzer").

Claim 1 has been amended to avoid the 35 U.S.C. § 102 and 35 U.S.C. § 103(a) rejections by reciting that the one or more than one connecting piece which is protrusively formed on a surface of the current collector plate extends in the direction of the axis of the electrode unit on a side of said current collector plate not connected to said edge of an electrode and is welded to a base portion of one of the negative and positive electrode assemblies to form a welded surface between said one or more than one connecting piece and said base portion extending in the direction of the axis of the electrode unit. Claim 4 has been canceled.

In the battery of the present invention, a path between the connecting piece(s) (and electrode unit) and the terminal assembly is shortened (as compared to a conventional battery as shown, for example, in Fig. 13 of the application) by forming the connecting piece(s) protrusively extending in the direction of the axis of the

electrode unit on the on a side of a current collector plate not connected to an edge of an electrode of the electrode unit, and by welding the protruding connecting piece(s) and a base portion of the terminal assembly to form a welded surface between the connecting piece and the base portion, the welded surface extending in the direction of the axis of the electrode unit. Electro resistance is reduced by shortening the current path (see paragraph [0007] of the publication of the present application (U.S. Patent Application Publication No. 20040023107)) and volume efficiency is increased by reduction of dead space inside of the battery (see paragraphs [0071] and [0072] of the publication).

Additionally, the connecting piece(s) and terminal assembly are welded at a location where air leakage efficiency of the battery is not effected. Therefore, there is no leakage of liquid due to pinholes created during welding. With the structure of the battery of the battery of the present invention it is possible to reduce electrical resistance, and to increase volume efficiency and productivity.

In Ura, a positive electrode current collecting plate 8 and negative electrode current collecting plate 9 are respectively connected to a battery closure 6 and battery case 5. Connecting strips 8a and 9a, respectively, which extend from the outer

circumference of the current collecting plates 8 and 9 in a direction perpendicular to an axis of the body of the electrode unit, connect the collecting plates to the inside surface of the battery closure 6 and the inside bottom surface of the battery case 5, respectively. The welded surfaces formed between the connecting strips and the inside surface of the battery closure 6 and the inside bottom surface of the battery case 5 extend in a direction perpendicular to an axis of the body of the electrode unit - not in the direction of the axis of the electrode unit.

In the battery of Ura, similar to the conventional battery illustrated in Fig. 13 of the present application, the length of the current path of the electrode unit and the battery closure is long. The long current path increases internal resistance and decreases battery volume efficiency.

Ura, in view of the structural differences explained above, does not disclose each of the elements (or limitations) of the battery of the present invention as recited in claim 1 and is insufficient to support a rejection under 35 U.S.C. § 102 of claim 1 as amended.

Referring to the rejection of claims 2 and 3 as being obvious under 35 U.S.C. § 103(a) over Ura in view of Coetzer, the Office has not identified a proper motive in the art for one of ordinary

skill in the art to modify the battery of Ura as proposed in the Final Action. In the Final Action, the Office merely notes that Coetzer teaches "an outer circumferential wall of the connecting piece "58" and an inner circumferential wall of the flange portion "49" of the terminal assembly "46" forming a connection that is welded from outside the flange portion (See Figure 1 and column 6, lines 13-14) and concludes, based on the existence of such teaching alone, that it would have been obvious for one of ordinary skill in the art to modify the battery of Ura to include a flange portion of the terminal assembly that forms a connection with a connecting piece of the current collector that is welded from outside the flange portion in order to reduce the internal resistance of the battery.

The Office has the burden, in the first instance, of supporting its case for prima facie obviousness of a claim under 35 U.S.C. § 103(a) by proper reasoning or evidence. No reasoning has been provided by the Office to show the existence in the art, explicitly or implicitly, of a motive to combine Ura and Coetzer as proposed in the Final Action.

For this reason alone the 35 U.S.C. § 103(a) rejection is improper and should be removed.

Moreover, the connection of terminal 49 and current collector 58 on the outer surface of a battery closure as shown in Fig. 1 and at lines 7-9, column 6, of Coetzer is distinct from the structure of the present invention and modification of Ura to include the structure of Coetzer will not result in the battery of the present invention. Terminal 49 and current collector 58 of the battery of Coetzer are welded in a vertical direction to the lid. It is impossible to weld in a direction perpendicular to an axis of the body of the electrode unit due to the structure of the terminal 49 and current collector 58. A welded surface of terminal 49 and current collector 58 does not extend in the direction of the axis of the body of the electrode unit.

For this reason also, the rejection of claims 2 and 3 over Ura in view of Coetzer under 35 U.S.C. § 103(a) is improper.

A new claim, claim 5, has been added to the application. New claim 5 recites the embodiment described in paragraph [0088] of the publication of the present application where the negative electrode terminal assembly comprises a terminal connector which penetrates from inside of the battery to outside of the battery, at least one insulator which electrically insulates the lid of the battery from the terminal connector, and a rivet means having a cylindrical

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shape connecting the terminal connector and the at least one insulator to the lid.

Neither Ura nor the combination of Ura and Coetzer discloses or suggests such structure.

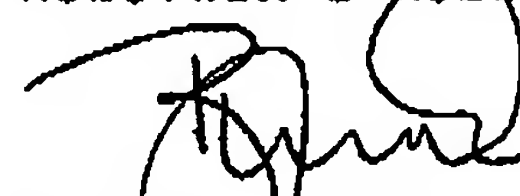
Removal of the 35 U.S.C. § 102 and 35 U.S.C. § 103(a) grounds of rejection and a notice of allowability of the claims are in order and are respectfully solicited.

The foregoing is believed to be a complete and proper response to the Office Action dated April 18, 2006, and is believed to place this application in condition for allowance.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,  
KUBOVCIK & KUBOVCIK



Ronald J. Kubovcik  
Reg. No. 25,401

Atty. Case No. SNY-038  
The Farragut Building  
Suite 710  
900 17th Street, N.W.  
Washington, D.C. 20006  
Tel: (202) 887-9023  
Fax: (202) 887-9093  
RJK/ff